

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

For Agenda of February 28, 2008

To: Board of Directors
Sacramento Metropolitan Air Quality Management District

From: Larry Greene, Air Pollution Control Officer
Sacramento Metropolitan Air Quality Management District

Subject: Contract between the Altostratus for the Urban Forest for Clean Air Demonstration Project – Photochemical Modeling.

Recommendation

Approve the attached Resolution authorizing the Air Pollution Control Officer to negotiate and sign a contract, not to exceed \$205,433, with Altostratus, Inc.

Purpose

The purpose of the contract with Altostratus, Inc. is to evaluate the effects of the urban forest on regional air quality. The evaluation will use photochemical modeling to quantify the ozone impacts from temperature and ozone precursor reductions from tree planting strategies. A preliminary draft of the agreement is attached. This contract will be funded by an existing grant of Congestion Management Air Quality (CMAQ) funds.

Background

Studies have shown that an increase in the tree canopy coupled with the appropriate selection of trees may reduce ozone concentrations via several mechanisms: direct absorption of ozone and its precursors; lowering local temperatures, which reduces the rate of ozone formation; providing shade to buildings which reduce the cooling energy needs; and reducing parking lot temperatures which reduce gasoline evaporation. Trees may also cause emission increases, however, because they emit ozone precursors and the tree canopy may adversely affect pollutants dispersion patterns. Therefore, a thorough evaluation of all the tree effects on ozone air quality requires the use of photochemical and meteorological models.

On March 23, 2006, the Board approved the first phase of the project authorizing Sacramento Tree Foundation (STF) and Center of Urban Forest Research (CUFR) to conduct an initial study to evaluate the air quality impacts of the urban forest program. STF and CUFR presented the results of the preliminary evaluation confirming air quality benefits from an enhanced urban forest to the Board on October 26, 2006 and the Board authorized the second phase of the project. The air quality modeling authorized by this contract is a major part of the second phase of the urban forest analysis.

After the October 2006 Board action Staff began development of a control measure to expand and optimize the urban forest. The measure will be included in the upcoming attainment plan, which must demonstrate how the region will meet federal ambient air quality standards for ozone by June 15, 2019.

The Urban Forest for Clean Air Demonstration Project is not a traditional emission control measure. The United States Environmental Protection Agency (USEPA) classified it as an emerging and voluntary measure. One of the requirements for emerging and voluntary measures is to quantify ozone benefits. Therefore, this modeling effort will satisfy EPA requirements to include the tree planting strategy in the State Implementation Plan for ozone.

Altostratus, Inc. qualification and selection

A request for proposals was released on September 17, 2007 and sent to 21 qualified contractors and posted on our website. We received two bids for this project from Altostratus and Sonoma Technologies. The contract evaluation team included our staff and staff from California Air Resources Board (CARB), USEPA Region 9, Center for Urban Forest Research (CUFR), and Sacramento Tree Foundation (STF). After careful consideration of the proposals and evaluating the respondent's resources and experience, the evaluation team recommends selection of Altostratus, Inc. as the contractor for this photochemical modeling project.

The team of Altostratus, Inc. consists of Dr. Haider Taha and sub-contractors: Dr. James Wilkinson, Alpine Geophysics, and Dr. Robert Bornstein, San Jose State University. This team has extensive knowledge and experience in the area of meteorological modeling, photochemical modeling, and urban forestation. Dr. Taha worked with the California Energy Commission during 2003-2007 for a multi-year, two phase modeling study to evaluate urban heat island control via increased urban albedo and forestation in California as a potential strategy to improve air quality. Additionally, Dr. Taha and Dr. Bornstein had teamed together to evaluate the Urban Heat Island effects from a proposed Houston tree-planting scenario for the Houston Advanced Research Center. Dr. Taha and Dr. Bornstein are recognized as pioneers and leaders in the research of urban heat island photochemical modeling.

Funding and work schedule

The total amount of this contract is not to exceed \$205,433 and is being funded through a CMAQ grant (Federal-Aid Project No. 03-6236.) This grant funding was included in the District's FY07/08 budget. The contract will commence upon signature by both parties and terminate on December 31, 2009, unless extended by both parties to no later than December 31, 2011.

Conclusion

In October 2006, the Board heard preliminary reports of air quality benefits from urban forest strategies and authorized development of a control strategy to enhance the air quality benefits of the urban forest. This contract is to perform required photochemical modeling to validate the preliminary air quality benefit estimates and qualify the urban forest control strategy for SIP benefit. A contract evaluation team considered the responses from the request for proposals and recommends selection of the team headed by Altostratus, Inc., which includes recognized leaders in urban forest research.

Respectfully submitted,

Larry Greene, Air Pollution Control Officer
Sacramento Metropolitan AQMD

Approved as to form:

Kathrine Pittard, District Counsel
Sacramento Metropolitan AQMD

Attachments

The following documents accompany this Board Letter:

Resolution
Preliminary Draft of the Contract with Altostratus, Inc.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

RESOLUTION NO. AQM_____

Resolution Approving Contract No. E2007008 with Altostratus Inc.

WHEREAS, in October 2006 the Board of Directors considered the air quality benefits of an enhanced urban forest and authorized development of a potential control strategy to help the Sacramento Federal Nonattainment Area (SFNA) attain the federal 8-hour ozone standards; and

WHEREAS, an urban forest control strategy in the State Implementation plan must meet United States Environmental Protection Agency (USEPA) requirements for emerging and voluntary strategies to fully assess the air quality impacts from tree planting strategies; and

WHEREAS, photochemical modeling is the best available tool to evaluate and quantify the variety of impacts from urban forest strategies; and

WHEREAS, the District does not have the resources to perform the needed modeling in-house; and

WHEREAS, a Request For Proposals was released on September 17, 2007, was sent to 21 qualified contractors, and was posted on the District's website, www.airquality.org; and

WHEREAS, the bid responses were evaluated by staff from Sacramento Metropolitan Air Quality Management District, California Air Resources Board, USEPA Region 9, Center of Urban Forest Research, Sacramento Tree Foundation and recommends selection of Altostratus, Inc; and

WHEREAS, Altostratus, Inc. and their subcontractors have the resources and expertise to perform the required services with the available funding for this project; and

WHEREAS, the District has received a Congestion Mitigation and Air Quality (CMAQ) grant (Federal-Aid Project No. 03-6236) to fund this contract; and

NOW, THEREFORE, BE IT RESOLVED THAT the Board of Directors of the Sacramento Metropolitan Air Quality Management District authorizes and directs the Air Pollution Control Officer, in consultation with the District Counsel, to negotiate and sign a contract with Altostratus, Inc. in an amount not to exceed \$205,433, and to do and perform everything necessary to carry out the purpose of this resolution.

BE IT FURTHER RESOLVED THAT the APCO is authorized to make minor changes, including contract rates and duration, so long as the changes are consistent with the District's mission and this project's goals, and the revisions do not cause to exceed the maximum funding authorized in this Resolution; and

BE IT FURTHER RESOLVED THAT this contract will commence upon signature by both parties and terminate on December 31, 2009, unless extended by both parties to no later than December 31, 2011.

ON A MOTION by Director _____, seconded by Director _____, the foregoing resolution was passed and adopted by the Board of Directors of the Sacramento Metropolitan Air Quality Management District, State of California, this 28th day of February 2008, by the following vote, to wit:

AYES: Directors

NOES: Directors

ABSENT: Directors

Chairperson of the Board
Sacramento Metropolitan Air Quality
Management District
State of California

(SEAL)

ATTEST: _____
Clerk of the Board
Sacramento Metropolitan Air Quality Management District